ABSTRACT

A data storage apparatus includes a flash memory and a control unit that controls the rewriting of data in the flash memory. The flash memory is divided into sectors, each of which is completely erasable in a time T. During a rewriting operation, multiple sectors are erased simultaneously for a time U less than T, and new data are written in a sector that has undergone multiple erasures and is now fully erased. The new data typically replace data stored in a sector that proceeds to be erased during multiple rewriting operations. The duration of each rewriting operation is reduced because the erasing process lasts for time U instead of time T.